

REMARKS

Applicant has amended claim 1. Applicant respectfully submits that the amendments to claim 1 are supported by the application as originally filed and do not contain any new matter. Accordingly, the Office Action will be discussed in terms of claim 1 as amended.

The Examiner has rejected claims 1-4 under 35 USC 103 as being obvious over Barber in view of Yanagihara, JP '233, stating that Barber discloses that each of the leads is provided with a projection being formed with guided surfaces that are inclined surfaces, but fails to disclose that each one of the bumps is provided with a recess in a surface thereof that faces each of said leads with the recess comprising guide surfaces that are inclined surfaces and are formed between a bottom of said recess and opening edges of said recess; Yanagihara discloses a bump 11 with a recess; and it would have been obvious to one of ordinary skill in the art to modify Barber to include a bump with a recess as taught by Yanagihara.

In reply thereto, Applicant has carefully reviewed Barber and respectfully submits that Barber is merely a process for manufacturing bump tape with tape automated bonding and the product produced thereby. Accordingly, Applicant respectfully submits that while Barber may disclose a lead frame tape, Barber discloses nothing concerning the bumps on the semiconductor chip. Still further, Applicant respectfully submits that the shape of the ends of the lead frames are not for the purposes of guiding them into anything. In particular, the metal tape formed by Barber has a unique structure for stiffening the web which is relatively thin as compared to the leads or the bumps and the structure has nothing to do with guiding (see abstract of the disclosure, last six lines). In contrast thereto, Applicant's invention as claimed claims both the leads of the lead frames and the bumps which are provided on the surface of the semiconductor chip.

Applicant has further carefully reviewed Yanagihara JP '233 and respectfully submits that JP '233 merely teaches a process for forming a bump or a recess on the electrode pad 4 of a semiconductor element on a wafer for connection of the semiconductor element to a circuit substrate and does not teach anything concerning a bonding to leads of a lead frame or that the bonding of the leads of the lead frame to the bumps would all occur simultaneously and be done thermally.

In view of the above, therefore, Applicant respectfully submits that not only is the combination suggested by the Examiner not Applicant's invention but the combination suggested

by the Examiner is not suggested by the art. Therefore, Applicant respectfully submits that claims 1-4 are not obvious over Barber in view of Yanagihara JP '233.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

In view of the above, therefore, it is respectfully requested that this Amendment be entered, favorably considered and the case passed to issue.

Please charge any additional costs incurred by or in order to implement this Amendment or required by any requests for extensions of time to KODA & ANDROLIA DEPOSIT ACCOUNT NO. 11-1445.

Respectfully submitted,

KODA & ANDROLIA

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